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Goldenberg

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(54) **LONG CLICK DISPLAY OF A CONTEXT MENU**

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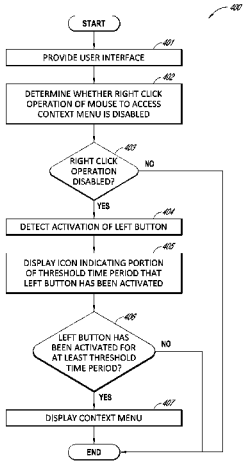
(57) **ABSTRACT**

In cases where the right mouse click operation to access a context menu is disabled, the techniques described in the disclosure may provide access to the context menu through a long click of the left mouse button. For example, the user may click and hold the left mouse button for at least a threshold period of time, and in response thereto, the user interface is updated to display the context menu. To indicate to the user how long it would take for the context menu to appear, an icon can be displayed next to the cursor, or as a part of the cursor. The icon can show the relative time left before the context menu is displayed (e.g., an elapsed and/or remaining portion of the threshold period of time, etc.).

20 Claims, 5 Drawing Sheets



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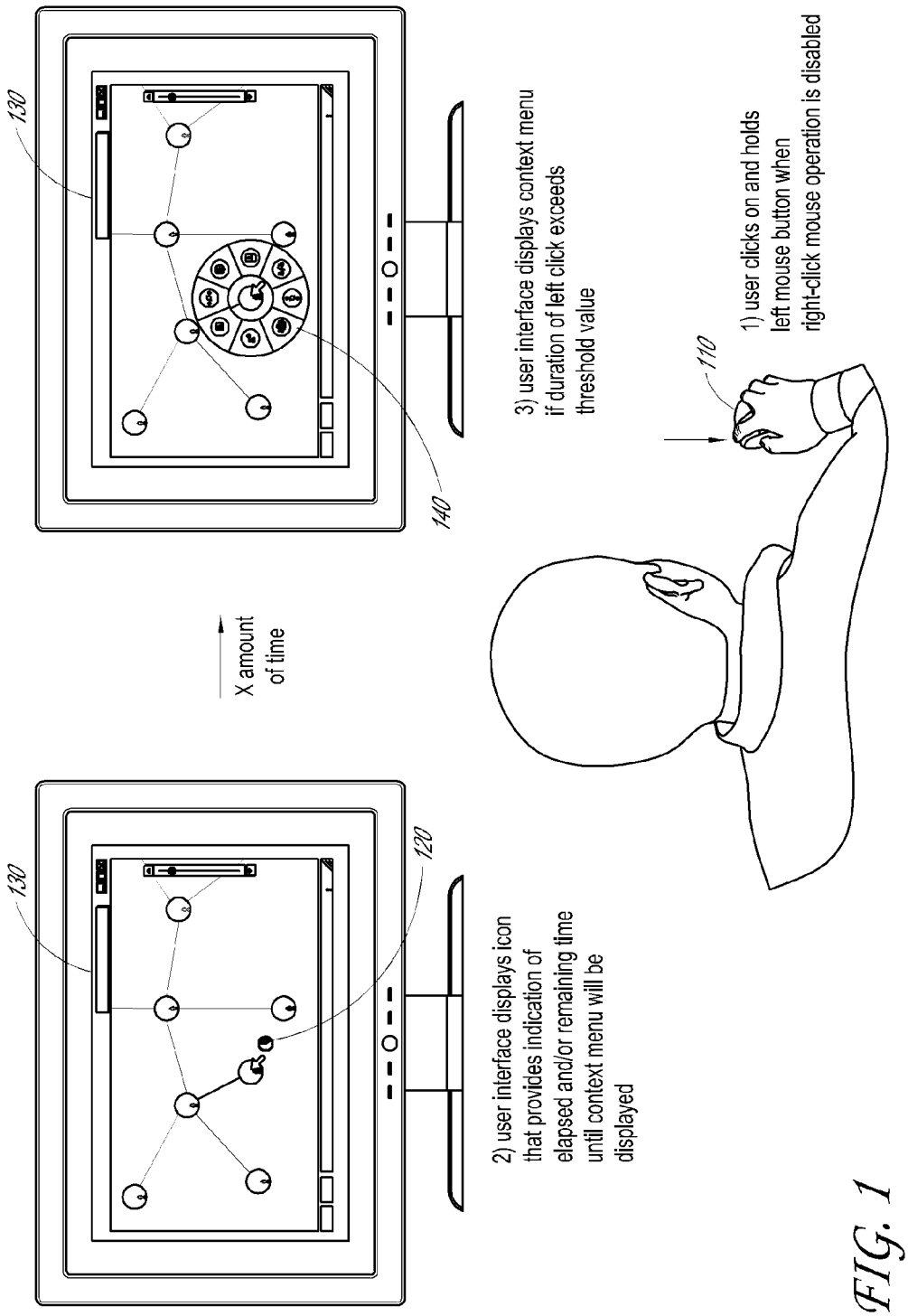
130
120
130
140
X amount of time
2) user interface displays icon that provides indication of elapsed and/or remaining time until context menu will be displayed
3) user interface displays context menu if duration of left click exceeds threshold value
110
1) user clicks on and holds left mouse button when right-click mouse operation is disabled

FIG. 1

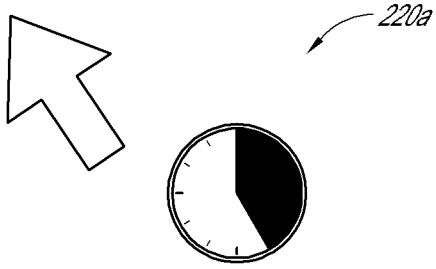

FIG. 2A

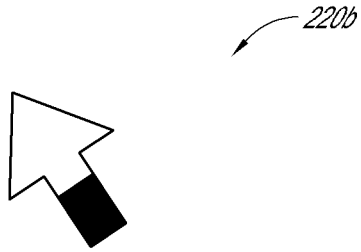

FIG. 2B

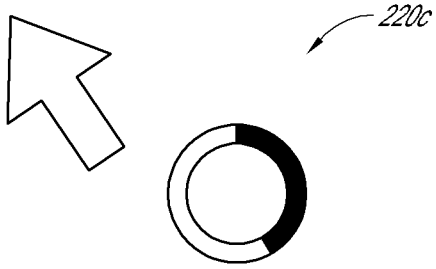

FIG. 2C

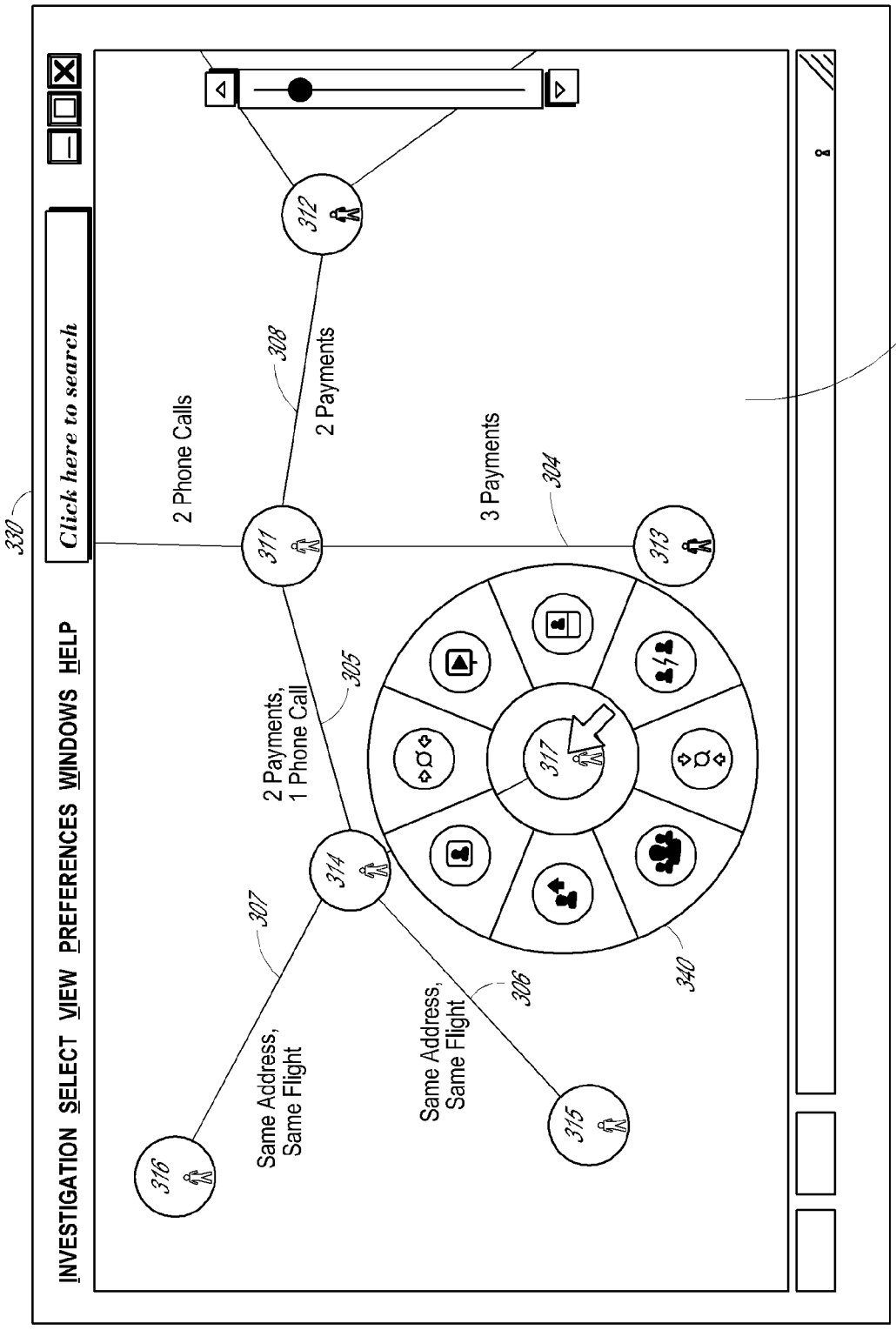
INVESTIGATION SELECT VIEW PREFERENCES WINDOWS HELP
Click here to search
330
303
312
308
2 Phone Calls
2 Payments
311
304
3 Payments
313
305
2 Payments,
1 Phone Call
317
314
307
Same Address,
Same Flight
306
Same Address,
Same Flight
340
316
315

FIG. 3

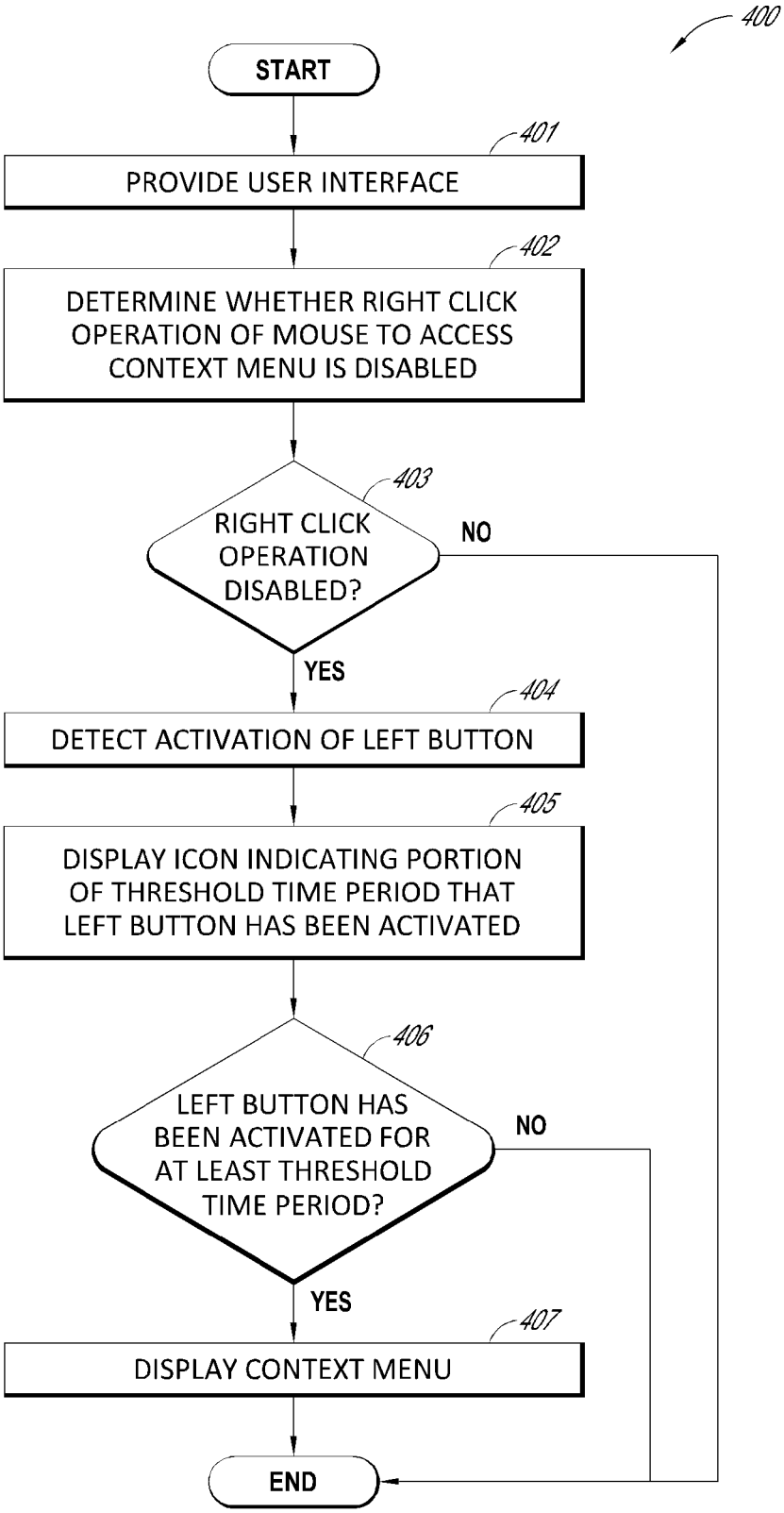
400
START
401
PROVIDE USER INTERFACE
402
DETERMINE WHETHER RIGHT CLICK OPERATION OF MOUSE TO ACCESS CONTEXT MENU IS DISABLED
403
RIGHT CLICK OPERATION DISABLED?
NO
YES
404
DETECT ACTIVATION OF LEFT BUTTON
405
DISPLAY ICON INDICATING PORTION OF THRESHOLD TIME PERIOD THAT LEFT BUTTON HAS BEEN ACTIVATED
406
LEFT BUTTON HAS BEEN ACTIVATED FOR AT LEAST THRESHOLD TIME PERIOD?
NO
YES
407
DISPLAY CONTEXT MENU
END

FIG. 4

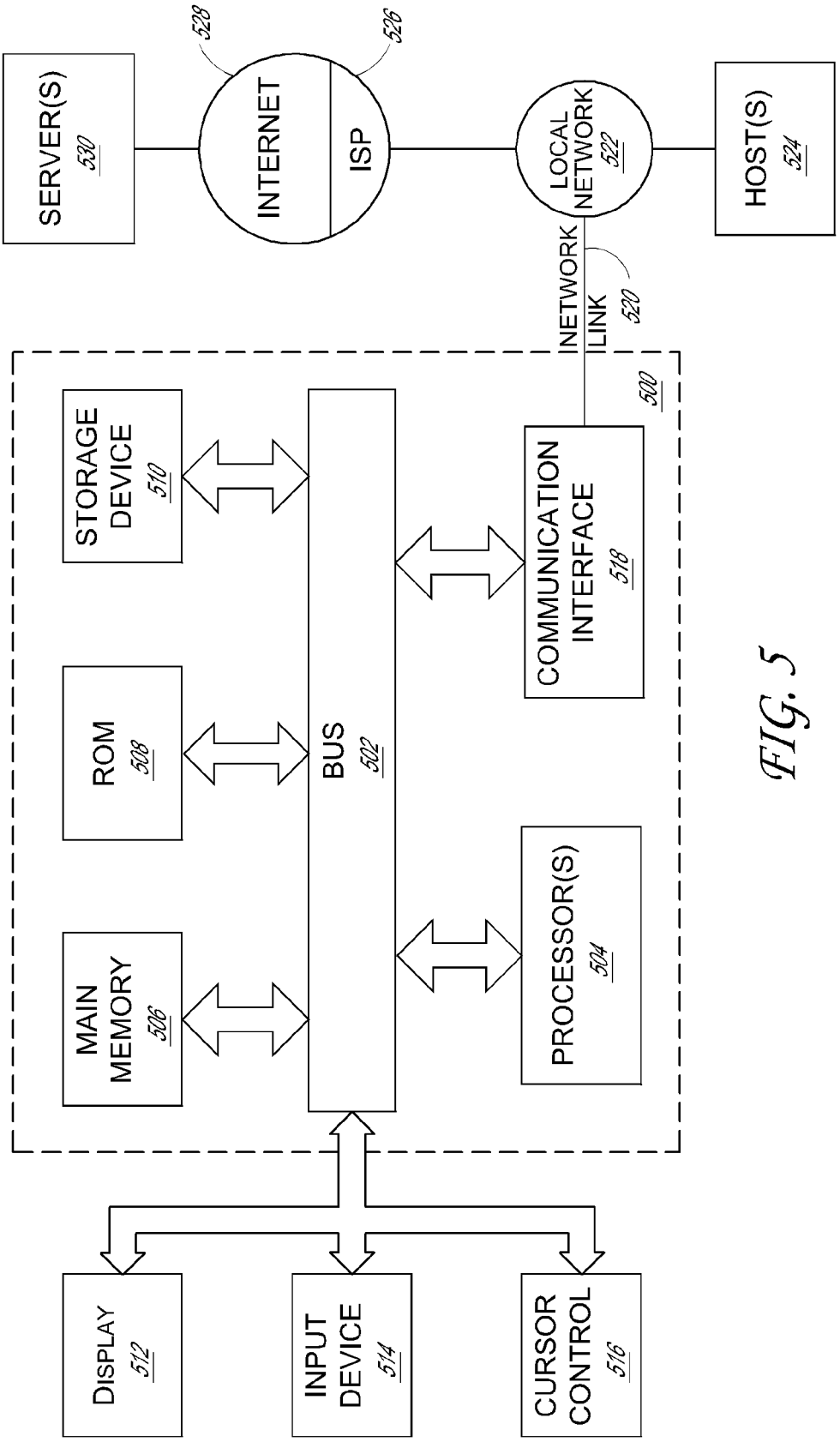
SERVER(S)
530
528
INTERNET
ISP
526
LOCAL NETWORK
522
HOST(S)
524
NETWORK LINK
520
500
STORAGE DEVICE
510
ROM
508
MAIN MEMORY
506
BUS
502
COMMUNICATION INTERFACE
518
PROCESSOR(S)
504
DISPLAY
512
INPUT DEVICE
514
CURSOR CONTROL
516

FIG. 5

LONG CLICK DISPLAY OF A CONTEXT MENU

INCORPORATION BY REFERENCE TO ANY PRIORITY APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 61/863,851, filed Aug. 8, 2013, the entire content of which is incorporated herein by reference. Any and all applications for which a foreign or domestic priority claim is identified in the Application Data Sheet as filed with the present application are hereby incorporated by reference under 37 CFR 1.57.

TECHNICAL FIELD

The present disclosure relates to displaying context menus in user interfaces.

BACKGROUND

Many user interfaces may utilize a context menu to provide a set of options relating to the current state or context of an application or operation system (e.g., choices relating to a selected item in the user interface). The context menu may be accessed when the user clicks on the right button of a mouse. In certain situations, the context menu may not be accessed by clicking the right mouse button. For example, right click to access the context menu may be disabled for security purposes, or may not be available, e.g., as in web user interfaces.

SUMMARY

The systems, methods, and devices described herein each have several aspects, no single one of which is solely responsible for its desirable attributes. Without limiting the scope of this disclosure, several non-limiting features will now be discussed briefly.

In one embodiment, a method of providing a context menu in a user interface comprises: providing a user interface on a display device using one or more computer processors; determining, by a computing system having one or more computer processors, whether right click operation of a mouse to access a context menu is disabled, wherein the mouse comprises at least a right button and a left button, the right click operation being associated with the right button and a context menu operation being associated with the left button; and in response to determining that the right click operation of the mouse to access the context menu is disabled, performing by the computing system: detecting activation of the left button; displaying in the user interface indicia of a portion of a threshold time period that the left button has been activated; and in response to determining that the left button has been activated for at least the threshold time period, displaying the context menu in the user interface.

In another embodiment, a system for providing a context menu in a user interface comprises: computer hardware comprising one or more computer processors; and a storage device storing instructions configured for execution by the one or more computer processors in order to: provide a user interface on a display device, wherein a mouse in communication with the one or more computer processors comprises at least a right button and one other button, a right click operation being associated with the right button and a context menu operation being associated with the one other button; detect activation of the one other button; display in the user interface indicia indicating a portion of a threshold time period that the one other button has been activated; and in response to determining that the one other button has been activated for at least the threshold time period, display the context menu in the user interface.

In yet another embodiment, a non-transitory computer readable medium comprises instructions for providing a context menu in a user interface that cause a computer processor to: provide a user interface on a display device; determine whether right click operation of a mouse to access a context menu is disabled, wherein the mouse comprises at least a right button and one other button, the right click operation being associated with the right button and a context menu operation being associated with the one other button; and in response to determining that the right click operation of the mouse to access the context menu is disabled: detect activation of the one other button; and in response to determining that the one other button has been activated for at least a threshold time period, display the context menu in the user interface.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a flow diagram for providing a context menu in a user interface when right click mouse operation to access the context menu is disabled.

FIGS. **2**A, **2**B, and **2**C illustrate various embodiments of an icon that indicates the progress until the context menu is displayed.

FIG. **3** illustrates one embodiment of a radial context menu.

FIG. **4** illustrates a flowchart for providing a context menu when right click mouse operation to access the context menu is disabled, according to certain embodiments.

FIG. **5** illustrates a computer system with which certain methods discussed herein may be implemented.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

Overview

In cases where the right mouse click operation to access a context menu is disabled, the techniques described in the disclosure may provide access to the context menu through a long click of the left mouse button. For example, the user may click and hold the left mouse button for at least a threshold period of time, and in response thereto, the user interface is updated to display the context menu. To indicate to the user how long it would take for the context menu to appear, an icon can be displayed next to the cursor, or as a part of the cursor. The icon can show the relative time left before the context menu is displayed (e.g., an elapsed and/or remaining portion of the threshold period of time, etc.).

FIG. **1** illustrates a flow diagram for providing a context menu **140** in a user interface **130** when the right click mouse operation (or other operation) configured to invoke the context menu **140** is disabled. A context menu may display a set of options or actions that are available for the currently selected item in an application or an operating system ("OS"), or for the current state or context of an application or an operating system. Accordingly, menu items shown in a context menu can vary depending on the item or the state the context menu is associated with. The context menu can generally be accessed or invoked by a click of the right mouse button ("right click mouse operation" or "right click operation").

However, as explained above, access to the context menu by right click mouse operation may be disabled (e.g., by an application, website, OS, etc.) or unavailable in certain cases.

For example, an application or an OS relating to highly sensitive content may disable right click operation to prevent copying and pasting of content. Or a website or a web application may not provide context menus relating to specific data objects or menu items via right click operation. In such cases, the techniques described in this disclosure can provide the context menu in response to a long click of the left mouse button. A long mouse click may generally be longer than a mouse click for selecting an item or opening a menu in the user interface (e.g., a short click). What qualifies as a long click can be defined as appropriate, e.g., by an application, website, OS, etc. For example, an application or OS may define a long click by the amount of time a mouse button is pressed.

The techniques in this disclosure are described in terms of a left button and a right button of a mouse for illustrative purposes, but such description should not be considered to be limiting. The techniques described herein can apply to a mouse having more than two buttons as well as a mouse having one button.

Returning to FIG. **1**, at event 1, the user clicks on and holds the left button of the mouse **110** when right click mouse operation to access the context menu **140** is disabled. FIG. **1** illustrates a two-button mouse **110** with a left button and a right button, but as explained above, the mouse **110** may have one button or may have three or more buttons, depending on the embodiment. In embodiments where the mouse **110** includes more than two buttons, the context menu **140** may be invoked through the long click of the left button or another mouse button that is not the right button (e.g., the middle button). The techniques described herein can also apply to devices that perform similar functions as a mouse **110**, which can be used to invoke context menus **140**.

At event 2, the user interface **130** displays an icon **120** that provides an indication of an elapsed and/or remaining time until the context menu **140** will be displayed in response to continued pressing of the left button. When the left button of the mouse **110** is pressed, the user may not know whether and/or when the context menu **140** will be displayed. Thus, the icon **120** can be displayed in the user interface **130** to provide an indication of how long it would take for the context menu **140** to appear in the user interface **130**. The context menu **140** may appear in the user interface **130** after a certain amount of time passes (e.g., a threshold period of time), and the icon **120** can indicate a portion of the amount of time that has passed or remains. The icon **120** may have different shapes, such as a progress bar, a clock, an increasing number, a decreasing number, etc. The icon **120** may be displayed in close proximity to the cursor.

In one embodiment, the context menu slowly fades in as the pressing of the left mouse button approaches the threshold period of time. Thus, the user can see the context menu at a low opacity level initially (and may be able to determine whether the context menu really is necessary) and can wait for the context menu to be functional by continuing to hold the left mouse button until the context menu reaches full opacity with reference to the background user interface (e.g., when the threshold period of time has been reached).

At event 3, the user interface **130** displays the context menu **140** if the duration of the left click exceeds the threshold value. If the left click is long enough (e.g., held for the threshold period of time), the user interface **130** can display the context menu **140**. The user interface **130** can terminate display of the icon **120** at the time, or immediately prior to, the context menu **140** is displayed. The user interface **130** may also terminate display of the icon **120** if the duration of the left click does not exceed the threshold value, and the left mouse button is released before reaching the threshold value.

FIGS. **2**A, **2**B, and **2**C illustrate some embodiments of the icon **120** in FIG. **1**, which shows progress until the context menu **140** is displayed in the user interface **130**. The icon **220** may be shown next to the cursor, or include the cursor as illustrated in FIG. **2**B. The icon **220** can indicate progress by filling in the portion of the icon **220** that corresponds to the amount of time the left mouse button has been pressed with reference to the threshold time period. The icon **220** can also denote such portion using different colors.

FIG. **2**A illustrates an icon **220***a* in the shape of a clock or timer. A portion of the clock or timer **220***a* can be filled in or distinguished in color to show the amount of time the left mouse button has been pressed. The clock icon **220***a* can be displayed next to the cursor. FIG. **2**B illustrates an icon **220***b* that utilizes the cursor. The cursor icon **220***b* can show the portion of time the left button has been pressed by filling or otherwise changing appearance of a portion of the cursor relative to the remaining time left to reach the threshold time period. In FIG. **2**B, the shape of the cursor is an arrow, but the cursor can have any shape. FIG. **2**C illustrates an icon **220***c* in the shape of a ring. The portion of the ring icon **220***c* corresponding to the amount of time the left button has been pressed can be filled in. The exemplary embodiments of the icon **120** are provided for illustrative purposes and should not be considered to be limiting. The icon **120** may have any shape or form that can indicate how long it would take for the context menu to be displayed.

FIG. **3** illustrates one embodiment of a radial context menu **340**. The context menu **140** in FIG. **1** can have any shape, e.g., a list, a circle, a rectangle, etc. In one embodiment, the context menu **140** can have a circular or radial shape as shown in FIG. **3**. The user interface **330** may display a radial context menu **340** in response to a long click of the left mouse button. The radial menu **340** may be in the form of a complete or a partial circle that includes one or more menu items. In some embodiments, the inner portion of the circle may not be a part of the radial menu **340**, as shown in FIG. **3**. For example, the radial menu **340** may be shaped like a ring. Each menu item can include a respective portion of the radial context menu **340**. A menu item may have an icon or diagram associated with it and/or text associated with it.

FIG. **4** illustrates a flowchart for providing a context menu when right-click mouse operation to access the context menu is disabled, according to certain embodiments. The process **400** is explained in connection with in FIG. **1**, but may also apply to FIG. **3**. Certain details relating to the process **400** are explained in more detail with respect to FIGS. **1**-**3**. The process **400** may be implemented by a computer system **500** as described with respect to FIG. **5**. Depending on the embodiment, the method of FIG. **4** may include fewer or additional blocks, and the blocks may be performed in an order that is different than illustrated.

At block **401**, a user interface **130** is presented on a computing system, such as a display of a laptop or desktop computer of a data analyst. The user interface **130** may be a graphical user interface (GUI) as explained in detail below. FIG. **3** illustrates one embodiment of the GUI that displays a graph, but any other user interface may be displayed.

At block **402**, the process **400** determines whether the right click operation of a mouse **110** to access the context menu **140** is disabled. The right click operation may be disabled by an application, a website, an OS, etc. Such determination may be made by accessing settings or configurations relating to an application, a website, or an OS. The mouse **110** may be a one-button mouse, a two-button mouse, or a button with more

than two buttons. For a mouse **110** with more than two buttons, the mouse button associated with invoking the context menu **140** may be the left button, or another button between the left button and the right button. For illustrative purposes, FIG. **4** is explained in terms of a left button and a right button of a mouse **110**. The right click operation may be associated with the right button, and the context menu operation may be associated with the left button. The context menu operation may refer to a mouse click operation that is associated with invoking or accessing the context menu.

At block **403**, if the right click operation of the mouse **110** is disabled, the process **400** detects activation of the left mouse button at block **404**. For instance, the left mouse button may be activated by a left click of the mouse **110**. The user can continue to activate the left mouse button by holding the left click. If the right click operation of the mouse **110** is not disabled, the process **400** may end without any further processing, and the context menu **140** may be accessed by the user right clicking on the user interface **130**. In one embodiment, the process **400** provides an indication to the user that right-click operations of the mouse are not disabled, such as by providing a pop-up message such as "Please access the context menu using your right mouse button," in response to determining that the right click operation is not disabled at block **403**.

At block **405**, the process **400** displays an icon **120** and/or other indicia indicating a portion of the threshold time period that the left button has been activated. The icon **120** can appear next to the cursor as explained above. The icon **120** may be the cursor itself that indicates the portion of the threshold time period (e.g., the cursor that is filled in to reflect the amount of threshold time period that has passed, as in FIG. **2**B). The icon **120** can have different shapes, depending on the embodiment.

Users may not want to see the icon **120** if the activation of the left button is not a long click. For brief activation of the left button, such as for a short click of the mouse **110**, displaying the icon **120** immediately after detecting the activation of the left button may lead to the icon **120** appearing and suddenly disappearing from the user interface **130** each time the user clicks the left mouse button. Therefore, the process **400** may wait a certain period of time ("waiting period") prior to displaying the icon **120** in response to the activation of the left button. In one embodiment, such period of time may be a few milliseconds. For example, the waiting period can be between 1 and 10 milliseconds. In one embodiment, the waiting period is adjustable, such as by the user of the computing device. Similarly, in one embodiment, the threshold time period for display of the context menu **140** is adjustable, such as by the user. Additionally, in one embodiment, the waiting period is proportional to the current threshold time period, such that adjustment of the threshold time period automatically adjusts the waiting time period in a proportional manner. In some embodiments, the waiting period is longer than the duration of a short click of a mouse **110**, where the short click is generally associated with selection of an item or a menu.

At block **406**, if the left button has been activated for the threshold time period, the process **400** displays the context menu **140** at block **407**. The threshold time period can be in the range of milliseconds or seconds. For example, the threshold time period may be between 1 and 5 seconds. Or the threshold time period may be in the range of 10 to 1000 milliseconds. The threshold time period can be determined appropriately by the user, an application, website, OS, etc. The context menu **140** can be a radial menu **340** as shown in FIG. **3** or any other context menu. If the left button has not been activated for the threshold time period, the process **400** may end without any further processing. In some embodiments, the process **400** may terminate displaying the icon **120**.

Example Data Analysis Graphical User Interface (GUI)

As shown in FIG. **3**, the properties, objects, and the links (e.g. relationships) between the objects can be visualized using a graphical user interface (GUI). For example, FIG. **3** displays a user interface showing a graph representation **303** of relationships (including relationships or links **304**, **305**, **306**, **307**, **308**) between the data objects (including data objects **311**, **312**, **313**, **314**, **315**, **316**, **317**) that are represented as nodes in the example of FIG. **3**. Further details regarding such a data analysis system are included in U.S. Pat. No. 7,962,495, entitled "CREATING DATA IN A DATA STORE USING A DYNAMIC ONTOLOGY," the content of which is incorporated herein by reference in its entirety.

In order to facilitate an understanding of the example discussed with reference to FIG. **3**, a number of terms are defined below. The terms defined below, as well as other terms used herein, should be construed to include the provided definitions, the ordinary and customary meaning of the terms, and/or any other implied meaning for the respective terms. Thus, the definitions below do not limit the meaning of these terms, but only provide exemplary definitions.

Ontology: Stored information that provides a data model for storage of data in one or more databases. For example, the stored data may comprise definitions for object types and property types for data in a database, and how objects and properties may be related.

Database: A broad term for any data structure for storing and/or organizing data, including, but not limited to, relational databases (Oracle database, mySQL database, etc.), spreadsheets, XML files, and text file, among others.

Data Object or Object: A data container for information representing specific things in the world that have a number of definable properties. For example, a data object can represent an entity such as a person, a place, an organization, a market instrument, or other noun. A data object can represent an event that happens at a point in time or for a duration. A data object can represent a document or other unstructured data source such as an e-mail message, a news report, or a written paper or article. Each data object may be associated with a unique identifier that uniquely identifies the data object. The object's attributes (e.g. metadata about the object) may be represented in one or more properties.

Link: A connection between two data objects, based on, for example, a relationship, an event, and/or matching properties. Links may be directional, such as one representing a payment from person A to B, or bidirectional.

In the example GUI of FIG. **3**, the data objects are person objects. In this example, the person nodes (associated with person data objects) may have relationships to other person nodes, for example, through payment objects. For example, relationship **304** is based on a payment associated with the individuals indicated in person data objects **311** and **313**. The link **304** represents these shared payments (for example, the individual associated with data object **311** may have paid the individual associated with data object **313** on three occasions). These relationships may be stored as links, or in some embodiments, as properties, where a relationship may be detected between the properties. In some cases, as stated above, the links may be directional. For example, a payment link may have a direction associated with the payment, where one person object is a receiver of a payment, and another person object is the payer of the payment.

In addition to visually showing relationships between the data objects, the user interface may allow various other

manipulations. For example, the objects within a database may be searched using a search interface **320** (e.g., text string matching of object properties), inspected (e.g., properties and associated data viewed), filtered (e.g., narrowing the universe of objects into sets and subsets by properties or relationships), and statistically aggregated (e.g., numerically summarized based on summarization criteria), among other operations and visualizations. However, certain of the manipulations may be available only through accessing a context menu associated with the software application. Thus, as noted above, if a particular computing environment, such as a browser setting, disables use of a command that is normally used to invoke a context menu (e.g., right clicking on a mouse), the systems and methods discussed herein for invoking the context menu using a long click may be very valuable in allowing the user to fully utilize functionality available in the software application.

Implementation Mechanisms

According to one embodiment, the techniques described herein are implemented by one or more special-purpose computing devices. The special-purpose computing devices may be hard-wired to perform the techniques, or may include digital electronic devices such as one or more application-specific integrated circuits (ASICs) or field programmable gate arrays (FPGAs) that are persistently programmed to perform the techniques, or may include one or more general purpose hardware processors programmed to perform the techniques pursuant to program instructions in firmware, memory, other storage, or a combination. Such special-purpose computing devices may also combine custom hard-wired logic, ASICs, or FPGAs with custom programming to accomplish the techniques. The special-purpose computing devices may be desktop computer systems, server computer systems, portable computer systems, handheld devices, networking devices or any other device or combination of devices that incorporate hard-wired and/or program logic to implement the techniques.

Computing device(s) are generally controlled and coordinated by operating system software, such as iOS, Android, Chrome OS, Windows XP, Windows Vista, Windows 7, Windows 8, Windows Server, Windows CE, Unix, Linux, SunOS, Solaris, iOS, Blackberry OS, VxWorks, or other compatible operating systems. In other embodiments, the computing device may be controlled by a proprietary operating system. Conventional operating systems control and schedule computer processes for execution, perform memory management, provide file system, networking, I/O services, and provide a user interface functionality, such as a graphical user interface ("GUI"), among other things.

For example, FIG. **5** is a block diagram that illustrates a computer system **500** upon which an embodiment may be implemented. For instance, the computer system **500** may execute software (e.g., standalone software applications, applications within browsers, network applications, etc.) that have right-click operations disabled, whether by the particular application, the operating system, the network administrator, or otherwise. Any of the methods discussed herein may be performed by the computing system **500** and/or a similar computing system having some or all of the components discussed with reference to FIG. **5**.

Computer system **500** includes a bus **502** or other communication mechanism for communicating information, and a hardware processor, or multiple processors, **504** coupled with bus **502** for processing information. Hardware processor(s) **504** may be, for example, one or more general purpose microprocessors.

Computer system **500** also includes a main memory **506**, such as a random access memory (RAM), cache and/or other dynamic storage devices, coupled to bus **502** for storing information and instructions to be executed by processor **504**. Main memory **506** also may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor **504**. Such instructions, when stored in storage media accessible to processor **504**, render computer system **500** into a special-purpose machine that is customized to perform the operations specified in the instructions.

Computer system **500** further includes a read only memory (ROM) **508** or other static storage device coupled to bus **502** for storing static information and instructions for processor **504**. A storage device **510**, such as a magnetic disk, optical disk, or USB thumb drive (Flash drive), etc., is provided and coupled to bus **502** for storing information and instructions.

Computer system **500** may be coupled via bus **502** to a display **512**, such as a cathode ray tube (CRT) or LCD display (or touch screen), for displaying information to a computer user. An input device **514**, including alphanumeric and other keys, is coupled to bus **502** for communicating information and command selections to processor **504**. Another type of user input device is cursor control **516**, such as a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor **504** and for controlling cursor movement on display **512**. This input device typically has two degrees of freedom in two axes, a first axis (e.g., x) and a second axis (e.g., y), that allows the device to specify positions in a plane. In some embodiments, the same direction information and command selections as cursor control may be implemented via receiving touches on a touch screen without a cursor.

Computing system **500** may include a user interface module to implement a GUI that may be stored in a mass storage device as executable software codes that are executed by the computing device(s). This and other modules may include, by way of example, components, such as software components, object-oriented software components, class components and task components, processes, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables.

In general, the word "module," as used herein, refers to logic embodied in hardware or firmware, or to a collection of software instructions, possibly having entry and exit points, written in a programming language, such as, for example, Java, Lua, C or C++. A software module may be compiled and linked into an executable program, installed in a dynamic link library, or may be written in an interpreted programming language such as, for example, BASIC, Perl, or Python. It will be appreciated that software modules may be callable from other modules or from themselves, and/or may be invoked in response to detected events or interrupts. Software modules configured for execution on computing devices may be provided on a computer readable medium, such as a compact disc, digital video disc, flash drive, magnetic disc, or any other tangible medium, or as a digital download (and may be originally stored in a compressed or installable format that requires installation, decompression or decryption prior to execution). Such software code may be stored, partially or fully, on a memory device of the executing computing device, for execution by the computing device. Software instructions may be embedded in firmware, such as an EPROM. It will be further appreciated that hardware modules may be comprised of connected logic units, such as gates and flip-flops, and/or may be comprised of programmable units, such as program-

mable gate arrays or processors. The modules or computing device functionality described herein are preferably implemented as software modules, but may be represented in hardware or firmware. Generally, the modules described herein refer to logical modules that may be combined with other modules or divided into sub-modules despite their physical organization or storage

Computer system **500** may implement the techniques described herein using customized hard-wired logic, one or more ASICs or FPGAs, firmware and/or program logic which in combination with the computer system causes or programs computer system **500** to be a special-purpose machine. According to one embodiment, the techniques herein are performed by computer system **500** in response to processor(s) **504** executing one or more sequences of one or more instructions contained in main memory **506**. Such instructions may be read into main memory **506** from another storage medium, such as storage device **510**. Execution of the sequences of instructions contained in main memory **506** causes processor(s) **504** to perform the process steps described herein. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions.

The term "non-transitory media," and similar terms, as used herein refers to any media that store data and/or instructions that cause a machine to operate in a specific fashion. Such non-transitory media may comprise non-volatile media and/or volatile media. Non-volatile media includes, for example, optical or magnetic disks, such as storage device **510**. Volatile media includes dynamic memory, such as main memory **506**. Common forms of non-transitory media include, for example, a floppy disk, a flexible disk, hard disk, solid state drive, magnetic tape, or any other magnetic data storage medium, a CD-ROM, any other optical data storage medium, any physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, NVRAM, any other memory chip or cartridge, and networked versions of the same.

Non-transitory media is distinct from but may be used in conjunction with transmission media. Transmission media participates in transferring information between nontransitory media. For example, transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus **502**. Transmission media can also take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

Various forms of media may be involved in carrying one or more sequences of one or more instructions to processor **504** for execution. For example, the instructions may initially be carried on a magnetic disk or solid state drive of a remote computer. The remote computer can load the instructions into its dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system **500** can receive the data on the telephone line and use an infra-red transmitter to convert the data to an infra-red signal. An infra-red detector can receive the data carried in the infra-red signal and appropriate circuitry can place the data on bus **502**. Bus **502** carries the data to main memory **506**, from which processor **504** retrieves and executes the instructions. The instructions received by main memory **506** may retrieves and executes the instructions. The instructions received by main memory **506** may optionally be stored on storage device **510** either before or after execution by processor **504**.

Computer system **500** also includes a communication interface **518** coupled to bus **502**. Communication interface **518** provides a two-way data communication coupling to a network link **520** that is connected to a local network **522**. For example, communication interface **518** may be an integrated services digital network (ISDN) card, cable modem, satellite modem, or a modem to provide a data communication connection to a corresponding type of telephone line. As another example, communication interface **518** may be a local area network (LAN) card to provide a data communication connection to a compatible LAN (or WAN component to communicated with a WAN). Wireless links may also be implemented. In any such implementation, communication interface **518** sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Network link **520** typically provides data communication through one or more networks to other data devices. For example, network link **520** may provide a connection through local network **522** to a host computer **524** or to data equipment operated by an Internet Service Provider (ISP) **526**. ISP **526** in turn provides data communication services through the world wide packet data communication network now commonly referred to as the "Internet" **528**. Local network **522** and Internet **528** both use electrical, electromagnetic or optical signals that carry digital data streams. The signals through the various networks and the signals on network link **520** and through communication interface **518**, which carry the digital data to and from computer system **500**, are example forms of transmission media.

Computer system **500** can send messages and receive data, including program code, through the network(s), network link **520** and communication interface **518**. In the Internet example, a server **530** might transmit a requested code for an application program through Internet **528**, ISP **526**, local network **522** and communication interface **518**.

The received code may be executed by processor **504** as it is received, and/or stored in storage device **510**, or other non-volatile storage for later execution.

Each of the processes, methods, and algorithms described in the preceding sections may be embodied in, and fully or partially automated by, code modules executed by one or more computer systems or computer processors comprising computer hardware. The processes and algorithms may be implemented partially or wholly in application-specific circuitry.

The various features and processes described above may be used independently of one another, or may be combined in various ways. All possible combinations and subcombinations are intended to fall within the scope of this disclosure. In addition, certain method or process blocks may be omitted in some implementations. The methods and processes described herein are also not limited to any particular sequence, and the blocks or states relating thereto can be performed in other sequences that are appropriate. For example, described blocks or states may be performed in an order other than that specifically disclosed, or multiple blocks or states may be combined in a single block or state. The example blocks or states may be performed in serial, in parallel, or in some other manner. Blocks or states may be added to or removed from the disclosed example embodiments. The example systems and components described herein may be configured differently than described. For example, elements may be added to, removed from, or rearranged compared to the disclosed example embodiments.

Conditional language, such as, among others, "can," "could," "might," or "may," unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain

features, elements and/or steps. Thus, such conditional language is not generally intended to imply that features, elements and/or steps are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without user input or prompting, whether these features, elements and/or steps are included or are to be performed in any particular embodiment.

Any process descriptions, elements, or blocks in the flow diagrams described herein and/or depicted in the attached figures should be understood as potentially representing modules, segments, or portions of code which include one or more executable instructions for implementing specific logical functions or steps in the process. Alternate implementations are included within the scope of the embodiments described herein in which elements or functions may be deleted, executed out of order from that shown or discussed, including substantially concurrently or in reverse order, depending on the functionality involved, as would be understood by those skilled in the art.

It should be emphasized that many variations and modifications may be made to the above-described embodiments, the elements of which are to be understood as being among other acceptable examples. All such modifications and variations are intended to be included herein within the scope of this disclosure. The foregoing description details certain embodiments of the invention. It will be appreciated, however, that no matter how detailed the foregoing appears in text, the invention can be practiced in many ways. As is also stated above, it should be noted that the use of particular terminology when describing certain features or aspects of the invention should not be taken to imply that the terminology is being re-defined herein to be restricted to including any specific characteristics of the features or aspects of the invention with which that terminology is associated. The scope of the invention should therefore be construed in accordance with the appended claims and any equivalents thereof.

What is claimed is:

1. A method of providing a context menu in a user interface, the method comprising:

providing a user interface of a software application on a display device using one or more computer processors;

determining, by a computing system having one or more computer processors, whether accessing a context menu by right click operation of a mouse is disabled by an operating system, website, or other software application,

wherein the mouse comprises at least a right button and a left button, the right click operation being associated with the right button; and

in response to determining that accessing the context menu by the right click operation of the mouse is disabled, performing by the software application:

detecting activation of the left button;

displaying in the user interface indicia of a portion of a threshold time period that the left button has been activated, wherein said displaying is performed only after a waiting period has lapsed since a user activated the left button;

in response to determining that the left button has been activated for at least the threshold time period, displaying the context menu in the user interface; and

in response to determining that the left button has been deactivated before the threshold time period has lapsed, terminating display of the indicia.

2. The method of claim **1**, wherein the indicia depicts one or more of: a clock that indicates the portion of the threshold time period, a cursor that indicates the portion of the threshold time period, or a circle that indicates the portion of the threshold time period.

3. The method of claim **1**, wherein the context menu is a radial menu and comprises one or more menu items.

4. The method of claim **1**, wherein the mouse comprises at least one other button different from the left button and the right button, and the at least one other button is located left of the left button.

5. The method of claim **1**, wherein the waiting period is shorter than the threshold time period.

6. The method of claim **1**, wherein the waiting period is proportional to the threshold time period.

7. The method of claim **1**, wherein the threshold time period is longer than a duration of a click of the mouse for selecting an item in the user interface or for opening a menu in the user interface.

8. The method of claim **1**, wherein the display of the context menu and the display of the indicia overlap at least in part.

9. A system comprising:

computer hardware comprising one or more computer processors;

a mouse in communication with the one or more computer processors and comprising at least a right button and one other button, wherein a context menu operation associated with the right button is disabled by an operating system, website, or software application; and

a storage device storing instructions executable by the one or more computer processors to:

provide a user interface of a particular software application on a display device;

detect, by the particular software application, activation of the one other button;

display, by the particular software application, in the user interface indicia indicating a portion of a threshold time period that the one other button has been activated, wherein the displaying of the indicia is performed only after a waiting period has lapsed since a user activated the one other button;

in response to determining, by the particular software application, that the one other button has been activated for at least the threshold time period, display the context menu in the user interface; and

in response to determining that the one other button has been deactivated before the threshold time period has lapsed, terminate display of the indicia.

10. The system of claim **9**, wherein the indicia depicts one or more of: a clock that indicates the portion of the threshold time period, a cursor that indicates the portion of the threshold time period, or a circle that indicates the portion of the threshold time period.

11. The system of claim **9**, wherein the context menu is a radial menu and comprises one or more menu items.

12. The system of claim **9**, wherein the one other button is a left button.

13. The system of claim **9**, wherein the mouse comprises a left button, and the one other button is a button that is different from the left button and the right button.

14. The system of claim **9**, wherein the waiting period is shorter than the threshold time period.

15. The system of claim **9**, wherein the threshold time period is longer than a duration of a click of the mouse for selecting an item in the user interface or for opening a menu in the user interface.

16. A non-transitory computer readable medium comprising instructions executable by a computer processor to:

provide a user interface of a software application on a display device;

determine whether right click operation of a mouse to access a context menu is disabled by an operating system, website, or other software application,

wherein the mouse comprises at least a right button and one other button, the right click operation being associated with the right button; and

in response to determining, by the software application, that the right click operation of the mouse to access the context menu is disabled:

detect, by the software application, activation of the one other button;

display in the user interface indicia of a portion of a threshold time period that the left button has been activated, wherein the displaying of the indicia is performed only after a waiting period has lapsed since a user activated the left button;

in response to determining, by the software application that the one other button has been activated for at least a threshold time period,

display the context menu in the user interface; and

in response to determining that the one other button has been deactivated before the threshold time period has lapsed, terminate display of the indicia.

17. The non-transitory computer readable medium of claim **16**, wherein the context menu is a radial menu and comprises one or more menu items.

18. The non-transitory computer readable medium of claim **16**, wherein the one other button is a left button.

19. The non-transitory computer readable medium of claim **16**, wherein the mouse comprises a left button, and the one other button is a button that is different from the left button and the right button.

20. The non-transitory computer readable medium of claim **16**, wherein the waiting period is shorter than the threshold time period.

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